

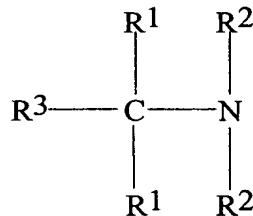
US CLAIMS:

1. An aqueous liquid cleaning composition having a pH of at least 7, preferably from 7 to 11, more preferably from 7 to 10 and comprising from 1% to 90% by weight of surfactant, a proteolytic enzyme and a primary stabiliser therefor, the composition further comprising an organic substance which forms a complex with a transition metal, the complex being capable of catalysing bleaching of a substrate by atmospheric oxygen.
2. The liquid cleaning composition of claim 1, wherein the primary enzyme stabiliser comprises a boron enzyme stabiliser.
3. The liquid cleaning composition of claim 2, wherein the boron enzyme stabiliser is selected from boric acid, sodium metaborate, sodium tetraborate and mixtures thereof.
4. The liquid cleaning composition of claim 1, wherein the primary enzyme stabiliser comprises a non-boron enzyme stabiliser.
5. The liquid cleaning composition of claim 4, wherein the non-boron enzyme stabiliser is selected from sources of calcium ions, modified peptides and mixtures thereof.
6. The liquid cleaning composition of claim 1, comprising from 0.001% to 10% preferably from 0.005% to 7.5% by weight of the primary enzyme stabiliser.

7. The liquid cleaning composition of claim 1, wherein the proteolytic enzyme is selected from subtilisins and modified bacterial serine proteases.

5 8. The liquid cleaning composition of claim 1, comprising from 0.005 to 0.1 AU per gram of the composition of proteolytic enzyme.

9. The liquid cleaning composition of claim 1, wherein  
10 the organic substance comprises a pentadentate ligand of the general formula (B):



(B)

15 wherein

each R<sup>1</sup>, R<sup>2</sup> independently represents -R<sup>4</sup>-R<sup>5</sup>,

R<sup>3</sup> represents hydrogen, optionally substituted alkyl, aryl or arylalkyl, or -R<sup>4</sup>-R<sup>5</sup>,

each R<sup>4</sup> independently represents a single bond or  
20 optionally substituted alkylene, alkenylene, oxyalkylene, aminoalkylene, alkylene ether, carboxylic ester or carboxylic amide, and

each R<sup>5</sup> independently represents an optionally N-substituted aminoalkyl group or an optionally substituted heteroaryl group selected from pyridinyl, pyrazinyl, pyrazolyl, pyrrolyl, imidazolyl, benzimidazolyl, pyrimidinyl, triazolyl and thiazolyl.

10. The liquid cleaning composition of claim 9, wherein  
the ligand is N,N-bis(pyridin-2-yl-methyl)-1,1-  
bis(pyridin-2-yl)-1-aminoethane.

5 11. The liquid cleaning composition of claim 1, wherein  
the medium is substantially devoid of a transition metal  
sequestrant.

12. The liquid cleaning composition of claim 1, wherein  
10 the medium further comprises a builder.

13. The liquid cleaning composition of claim 1, wherein  
the organic substance comprises a preformed complex of a  
ligand and a transition metal.

15 14. The liquid cleaning composition of claim 1, wherein  
the organic substance comprises a free ligand that  
complexes with a transition metal present in the water.

20 15. The liquid cleaning composition of claim 1, wherein  
the organic substance comprises a free ligand that  
complexes with a transition metal present in the  
substrate.

25 16. The liquid cleaning composition of claim 1, wherein  
the organic substance comprises a composition of a free  
ligand or a transition metal-substitutable metal-ligand  
complex, and a source of transition metal.

30 17. A liquid cleaning composition comprising a  
proteolytic enzyme and a non-boron primary stabiliser

therefor, the composition further comprising an organic substance which forms a complex with a transition metal, the complex being capable of catalysing bleaching of a substrate by atmospheric oxygen, the composition being substantially free of boron enzyme stabiliser.

18. The liquid cleaning composition of claim 17, comprising from 1% to 90% by weight of the surfactant.

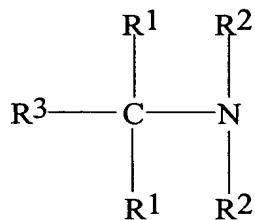
10 19. The liquid cleaning composition of claim 17, wherein the non-boron enzyme stabiliser is selected from sources of calcium ions, modified peptides and mixtures thereof.

15 20. The liquid cleaning composition of claim 17, comprising from 0.001% to 10% preferably from 0.005% to 7.5% by weight of the primary enzyme stabiliser.

20 21. The liquid cleaning composition of claim 17, wherein the proteolytic enzyme is selected from subtilisins and modified bacterial serine proteases.

22. The liquid cleaning composition of claim 17, comprising from 0.005 to 0.1 AU per gram of the composition of proteolytic enzyme.

25 23. The liquid cleaning composition of claim 17, wherein the organic substance comprises a pentadentate ligand of the general formula (B) :



(B)

wherein

- 5        each  $\text{R}^1$ ,  $\text{R}^2$  independently represents  $-\text{R}^4-\text{R}^5$ ,  
            $\text{R}^3$  represents hydrogen, optionally substituted alkyl,  
           aryl or arylalkyl, or  $-\text{R}^4-\text{R}^5$ ,  
           each  $\text{R}^4$  independently represents a single bond or  
           optionally substituted alkylene, alkenylene, oxyalkylene,  
 10      aminoalkylene, alkylene ether, carboxylic ester or  
           carboxylic amide, and  
           each  $\text{R}^5$  independently represents an optionally N-  
           substituted aminoalkyl group or an optionally substituted  
           heteroaryl group selected from pyridinyl, pyrazinyl,  
 15      pyrazolyl, pyrrolyl, imidazolyl, benzimidazolyl,  
           pyrimidinyl, triazolyl and thiazolyl.

24. The liquid cleaning composition of claim 23, wherein  
       the ligand is  $\text{N},\text{N}$ -bis(pyridin-2-yl-methyl)-1,1-  
 20      bis(pyridin-2-yl)-1-aminoethane.

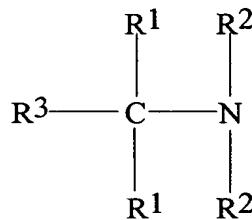
25. The liquid cleaning composition of claim 17, having  
       a pH value in the range from pH 6 to 11.

25      26. The liquid cleaning composition of claim 25, wherein  
       the composition has a pH value in the range from pH 7 to  
 10.

27. The liquid cleaning composition of claim 17, wherein the medium is substantially devoid of a transition metal sequestrant.
- 5 28. The liquid cleaning composition of claim 17, wherein the medium further comprises a builder.
- 10 29. The liquid cleaning composition of claim 17, wherein the organic substance comprises a preformed complex of a ligand and a transition metal.
- 15 30. The liquid cleaning composition of claim 17, wherein the organic substance comprises a free ligand that complexes with a transition metal present in the water.
- 20 31. The liquid cleaning composition of claim 17, wherein the organic substance comprises a free ligand that complexes with a transition metal present in the substrate.
- 25 32. The liquid cleaning composition of claim 17, wherein the organic substance comprises a composition of a free ligand or a transition metal-substitutable metal-ligand complex, and a source of transition metal.
- 30 33. A method of cleaning a substrate comprising applying to the substrate, an aqueous liquid cleaning composition having a pH of at least 7, preferably from 7 to 11, more preferably from 7 to 10 and comprising from 1% to 90% by weight of surfactant, a proteolytic enzyme and a primary stabiliser therefor, the composition further comprising

an organic substance which forms a complex with a transition metal, the complex being capable of catalysing bleaching of a substrate by atmospheric oxygen.

- 5 34. The method of claim 33, wherein the organic substance comprises a pentadentate ligand of the general formula (B) :



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(B)

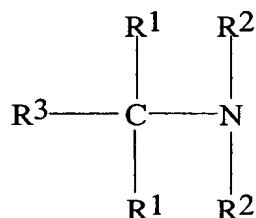
wherein

- each  $\text{R}^1$ ,  $\text{R}^2$  independently represents  $-\text{R}^4-\text{R}^5$ ,  
 $\text{R}^3$  represents hydrogen, optionally substituted alkyl,  
15 aryl or arylalkyl, or  $-\text{R}^4-\text{R}^5$ ,  
each  $\text{R}^4$  independently represents a single bond or  
optionally substituted alkylene, alkenylene, oxyalkylene,  
aminoalkylene, alkylene ether, carboxylic ester or  
carboxylic amide, and  
20 each  $\text{R}^5$  independently represents an optionally N-  
substituted aminoalkyl group or an optionally substituted  
heteroaryl group selected from pyridinyl, pyrazinyl,  
pyrazolyl, pyrrolyl, imidazolyl, benzimidazolyl,  
pyrimidinyl, triazolyl and thiazolyl.

25

35. The method of claim 34, wherein the ligand is N,N-bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane.

- 5       36. A method of cleaning a substrate comprising applying to the substrate, a liquid cleaning composition comprising a proteolytic enzyme and a non-boron primary stabiliser therefor, the composition further comprising an organic substance which forms a complex with a
- 10      transition metal, the complex being capable of catalysing bleaching of a substrate by atmospheric oxygen, the composition being substantially free of boron enzyme stabiliser.
- 15      37. The method of claim 36, wherein the organic substance comprises a pentadentate ligand of the general formula (B) :



20

(B)

wherein

- each  $\text{R}^1$ ,  $\text{R}^2$  independently represents  $-\text{R}^4-\text{R}^5$ ,
- $\text{R}^3$  represents hydrogen, optionally substituted alkyl,
- 25      aryl or arylalkyl, or  $-\text{R}^4-\text{R}^5$ ,
- each  $\text{R}^4$  independently represents a single bond or optionally substituted alkylene, alkenylene, oxyalkylene,

aminoalkylene, alkylene ether, carboxylic ester or carboxylic amide, and

each R<sup>5</sup> independently represents an optionally N-substituted aminoalkyl group or an optionally substituted 5 heteroaryl group selected from pyridinyl, pyrazinyl, pyrazolyl, pyrrolyl, imidazolyl, benzimidazolyl, pyrimidinyl, triazolyl and thiazolyl.

38. The method of claim 37, wherein the ligand is N,N-  
10 bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane.